

What is Claimed is:

5 1. A device for use in conjunction with a frictional mechanism in a feeder for releasing substantially flat items from a stack, wherein the feeder has a driving mechanism for driving the flat items at a lower section of the stack through a nip, and the frictional mechanism is disposed near the nip so as to allow one flat item to pass through the nip at a time, wherein the frictional mechanism comprises at least a roller
10 having a frictional surface disposed on a circumference of the roller, and a circumferential section of the frictional surface is in contact with the flat items at the lower section of the stack, said device is used to facilitate replacement of said circumferential section of the frictional surface with another circumferential section of the frictional surface, said device comprising:

15 a locking member having a plurality of facets forming a polygonal outer circumference of the locking member, each facet coving an angular section;

 a shaft, disposed in relation to the nip, for securely mounting the roller, the shaft having a longitudinal axis substantially parallel to the nip, wherein the shaft has a longitudinal section for slideably mounting the locking member, allowing the locking
20 member to move from a first portion of the longitudinal section to a second portion of the longitudinal section when needed, while preventing the locking member from rotating relative to the shaft; and

 a blocking mechanism, disposed relative to the first portion of the longitudinal section of the shaft, such that

25 when the locking member is positioned at the first portion of the longitudinal section of the shaft, one of the facets is at least partially in contact with the blocking mechanism, preventing the locking member and shaft from rotating about the longitudinal axis; and

 when the locking member is positioned at the second portion of the
30 longitudinal section of the shaft, the locking member and shaft are rotatable about the longitudinal axis, causing the shaft to turn, thereby achieving said replacement.

2. The device of claim 1, wherein the locking member is rotated at least one angular section when the locking member is positioned at the second portion of the longitudinal section of the shaft, so that when the locking member is moved to the first portion of the longitudinal section of the shaft, a different one of the facets is substantially in contact with the blocking mechanism.

3. The device of claim 1, wherein the locking member has a non-circular cross section, and the longitudinal section of shaft has a substantially matching cross section for slideably mounting the locking member.

4. The device of claim 3, wherein the non-circular cross section is polygonal in shape.

5. The device of claim 3, wherein the non-circular cross section is hexagonal in shape.

6. The device of claim 1, wherein the blocking mechanism comprises a surface which is in close proximity to said one of the facets when the locking member is positioned at the first portion of the longitudinal section of the shaft, and the surface is spaced from the locking member when the locking member when the locking member is positioned at the second portion of the longitudinal section of the shaft.

7. The device of claim 1, wherein the feeder comprises a shaft mount for mounting the shaft for rotation about the longitudinal axis of the shaft, and wherein the blocking mechanism is fixedly mounted on the shaft mount.

8. The device of claim 1, wherein each of the flat items has two side edges substantially perpendicular to the nip, and said at least one roller comprises two rollers, each having a frictional surface disposed near a different one of the two side edges.

9. The device of claim 8, wherein the shaft has two ends for separately and fixedly mounting the rollers, and wherein the longitudinal section of the shaft is co-axially connecting the two ends.

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10. The device of claim 1, wherein the polygonal circumference has six sides, and each angular section is substantially equal to 60 degrees of the outer circumference.

10 11. A method for replacing a first circumferential section of a frictional surface with a second circumferential section of the frictional surface in a feeder for releasing substantially flat items from a stack, wherein the feeder comprises:

a driving mechanism for driving the flat items at a lower section of the stack through a nip, and

15 a frictional mechanism disposed near the nip so as to allow one flat item to pass through nip at a time, the frictional mechanism having at least a roller for circumferentially mounting the frictional surface, the roller fixedly mounted on a shaft having a longitudinal axis substantially parallel to the nip, wherein the first circumferential section is in contact with the flat items at the lower section of the stack, said method comprising the steps of:

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1) providing a locking mechanism comprising:

a locking member having a plurality of facets forming a polygonal outer circumference of the locking member, each facet covering an angular section;

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a longitudinal section on the shaft for slideably mounting the locking member, allowing the locking member to locate at a first portion or at a second portion of the longitudinal section while preventing the locking member from rotating about the longitudinal axis of the shaft relative to the longitudinal section, wherein the locking member is located at the first portion at least when the feeder is in operation;

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a blocking mechanism disposed adjacent to the first portion of the longitudinal section of the shaft such that when the locking member is located at

the first portion of the longitudinal section, the blocking member prevents the locking member and shaft from rotating about the longitudinal axis of the shaft, and when the locking member is located at the second position, the locking member and shaft are rotatable about the longitudinal axis of the shaft;

- 5 2) sliding the locking member from the first position to the second position;
3) rotating the locking member for causing the shaft to turn at least one angular section so as to allow the second circumferential section to contact with the flat items at the lower section of the stack; and
4) sliding the locking member from the second position to the first position.

10 12. The method of claim 11, wherein the blocking mechanism comprises a surface which is in close proximity to said one of the facets when the locking member is positioned at the first portion of the longitudinal section of the shaft, and the surface is spaced from the locking member when the locking member when
15 the locking member is positioned at the second portion of the longitudinal section of the shaft.

13. A feeder for releasing substantially flat items from a stack having a lower section, the feeder comprising:

20 a driving mechanism, disposed relative to the lower section of the stack, for driving the flat items at the lower section of the stack through a nip along a releasing direction; and

a frictional mechanism, disposed adjacent to the nip, for allowing one flat item to pass through the nip at a time, said frictional mechanism comprising:

25 at least one roller, the roller having a frictional surface fixedly mounted on a circumference of the roller, the frictional surface having a circumferential section in contact with the flat items at the lower section of the stack;

a locking member having a plurality of facets forming a polygonal outer circumference of the locking member, each facet covering an angular section;

30 a shaft having a longitudinal axis substantially parallel to the nip for fixedly mounted the roller, the shaft having a longitudinal section for slideably mounting

the locking member, allowing the locking member to be located in a first portion or a second portion of the longitudinal section; and

a blocking mechanism, disposed adjacent to the first portion of the longitudinal section of the shaft such that

5 when the locking member is located at the first portion of the longitudinal section of the shaft, the blocking member is at least partially in contact with one of the facets of the locking member, preventing the locking member and shaft from rotating about the longitudinal axis, and

10 when the locking member is located at the second portion of the longitudinal section, the locking member and shaft are rotatable about the longitudinal axis, causing the shaft to turn, thereby replacing said circumferential section of the frictional surface with another circumferential section of the frictional surface.

15 14. The feeder of claim 13, wherein the flat items comprising a plurality of envelopes for use in an addressing machine.

15. The feeder of claim 13, wherein the flat items comprises a plurality of enclosure documents for inserting into envelopes in a mailing machine.

20 16. The feeder of claim 13, wherein the flat items comprises a plurality of sheets of paper.